99-D-108, Renovate Existing Roadways, Nevada Test Site

(Changes from FY 2000 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

- The design and construction schedule have slipped due to delays associated with the congressionally mandated independent assessments.
- The TEC and TPC of this project have decreased by $2,024,000 due to a $2,005,000 congressionally enacted reduction in the FY 2000 appropriation for this line item and a subsequent FY 2000 rescission of $19,000 enacted by P.L. 106-113.
- The original scope included approximately $5,000,000 for the renovation of 37 miles of Mercury Highway. As part of the Title I design, an exhaustive engineering study will be conducted to determine which parts of the originally proposed 37 miles require the most extensive work to address the previously identified safety issues. It is likely that only about half of the 37 miles will be renovated due to the $2,024,000 TEC reduction.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1999 Budget Request *(Preliminary Estimate)*	1Q 1999	4Q 1999	1Q 2000	1Q 2001	11,005	11,128
FY 2000 Budget Request	3Q 1999	1Q 2000	2Q 2000	1Q 2001	11,005	11,128
FY 2001 Budget Request *(Current Baseline Estimate)*	3Q 2000	4Q 2000	4Q 2000	4Q 2001	8,981	9,104

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
1999	2,000	2,000	0
2000	4,981 [a]	4,981	1,810
2001	2,000	2,000	7,171

[a] Original appropriation was $5,000,000. This was reduced by $19,000 for the FY 2000 rescission enacted by P.L. 106-113.

3. Project Description, Justification and Scope

This project will completely renovate the worst road segments of the 37 mile-long Mercury Highway that has deteriorated beyond repair. Mercury Highway runs from the southern boundary of the Nevada Test Site (NTS) to the intersection of Rainier Mesa Road in Area 3. An extensive engineering survey of the entire length of the Mercury Highway will be conducted to establish the segment in need of the most urgent renovation. Subject to value engineering studies to be conducted as part of the project design, these renovations could range from a complete roadbed reconstruction to just removing existing debris from pavement cracks, filling cracks with asphalt sealant, installing a stress absorbing membrane, and applying a new asphaltic-concrete overlay. In addition, the 2.3 miles of the Rainier Mesa Road from the intersection of Mercury Highway to the intersection of road 4-04 in Area 4 will be completely reconstructed. Repairs will consist of total reconstruction of the roadbed and the application of the asphalt pavement.

The renovated/reconstructed roadways will have a configuration-cross section that meets all current State of Nevada codes applicable to the NTS. Aggregate shoulders will parallel each side. All required traffic signs, striping, and markers will be included in this project. No buildings or utilities are included in this project.

Mercury Highway is the primary access highway for any activity at the NTS, including subcritical experiments and future missions. This all-weather, paved, asphaltic-concrete road has been in service for almost 40 years. All personnel, heavy equipment, and supplies entering and/or exiting the NTS depend upon this access route. The pavement surface has severely deteriorated because of age, ground motion from underground nuclear events, and heavy truck traffic. Trucks frequently carry loads that far exceed normal highway limits, i.e., H-20 highway wheel-loading. Mercury Highway has been identified as a safety issue regarding the transport of special nuclear material and high explosives. This project will reduce the risk of a potentially dangerous accident. Standard remedial measures, such as crack-filling or chip-and-seal overlays, will do little to extend the road's service life. The proposed renovation/reconstruction will eliminate pavement distress and extend the road's service life.

The Rainier Mesa Road is the only access road to the ongoing Big Explosive Experiment Facility (BEEF) in Area 4. This road is now extensively damaged. Total reconstruction of this road is required to continue use as a viable access road in support of the BEEF program.

Project Milestones:

FY 2000:	Conduct soils and geologic investigations; perform land surveying and start engineering and design efforts	3Q
	Complete engineering and design effort. Start reconstruction of Rainier Mesa Road	4Q
FY 2001:	Start renovation of Mercury Highway	1Q
	Complete renovation/reconstruction of both roadways; Begin close-out and as-built process	4Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications)	1,160	1,332
Design Management Costs (0.8% of TEC)	70	85
Project Management Costs (2.2% of TEC)	200	189
Total Design Costs (15.9% of TEC)	1,430	1,606
Construction Phase		
Improvements to Land	5,081	6,924
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	90	72
Construction Management (5.9% of TEC)	530	534
Project Management (2.8% of TEC)	250	270
Total Construction Costs (66.3% of TEC)	5,951	7,800
Contingencies		
Design Phase (3.1% of TEC)	280	273
Construction Phase (14.7% of TEC)	1,320	1,326
Total Contingencies (17.8% of TEC)	1,600	1,599
Total, Line Item Costs (TEC) [a]	8,981	11,005

5. Method of Performance

Design will be performed by the performance-based management contractor. To the extent feasible, construction and procurement will be accomplished by fixed-price contracts and subcontracts awarded on the basis of competitive bidding. Inspection, contract administration, surveying, and related project functions will be accomplished by the performance-based management contractor.

[a] Escalation rates taken from the FY 1999 DOE escalation multiplier tables.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 1999	FY 2000	FY2001	Outyears	Total
Project Cost						
Facility Costs						
Design	0	0	1,610	100	0	1,710
Construction	0	0	200	7,071	0	7,271
Total, Line item TEC	0	0	1,810	7,171	0	8,981
Total Facility Costs (Federal and Non-Federal)	0	0	1,810	7,171	0	8,981
Other Project Costs						
Conceptual design costs	92	0	0	0	0	92
NEPA documentation costs	26	0	0	0	0	26
Other project-related costs	5	0	0	0	0	5
Total, Other Project Costs	123	0	0	0	0	123
Total Project Cost (TPC)	123	0	1,810	7,171	0	9,104

7. Related Annual Funding Requirements

(FY 2001 dollars in thousands)

	Current Estimate	Previous Estimate
Total related annual funding (operating from FY 2001 through FY 2035)	0	0